

APPLICATION UNDER UNITED STATES PATENT LAWS

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Invention: PING-PONG PADDLE

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This is a:

- ☐ Provisional Application
- ☒ Regular Utility Application
- ☐ Continuing Application
 - ☐ The contents of the parent are incorporated by reference
- ☐ PCT National Phase Application
- ☐ Design Application
- ☐ Reissue Application
- ☐ Plant Application

SPECIFICATION

PING-PONG PADDLE

This application claims priority to German Patent Application 20301529.0, filed February 1, 2003, the contents of which are incorporated by reference herein.

BACKGROUND OF THE INVENTION

The invention relates to a ping-pong paddle, having a face and a handle which includes a forward handle part, oriented toward the face and solidly connected to it, and a rear handle part axially adjoining the forward handle part.

In known ping-pong paddles, the face and the handle are typically joined together nondetachably and as a rule also invariably in terms of their mutual position. To that end, the region of the face toward the handle extends with an extension into the region of the handle, where this extension is connected to two handle shells. As a rule, the handle has an oval shape, and the flattened sides are oriented toward the plane of the face and aligned parallel with this plane.

It has been found that this predetermined disposition of the handle relative to the face and the design of the handle do not allow optimal holding of the handle for every player.

BRIEF SUMMARY OF THE INVENTION

It is therefore the object of the invention to disclose a ping-pong paddle which makes an optimal hold on the handle possible for the player, thus permitting him to manipulate the paddle in a way that suits his individual preferences and peculiarities.

This object is attained according to the invention by the characteristics of claim 1. Further, particularly advantageous features of the invention are disclosed by the dependent claims.

The invention is based essentially on the concept of embodying the handle so that it is rotatable about the axis of symmetry that extends through the handle part and the face and can be fixed in a given rotated position, so that the flattened side of the handle no longer need necessarily extend exactly parallel to the plane of the face.

This is attained according to the invention by providing that the first end of a handle shaft that extends in the direction of the central longitudinal axis of the handle is secured to the forward handle part, and the rear handle part is disposed rotatably around the handle shaft and can be fixed in the respective position, pivoted relative to the forward handle part, by means of a screw connection.

In a first embodiment of the invention, the rear handle part is embodied in one piece and has a recess, extending in the direction of its longitudinal axis, through which the handle shaft secured to the forward handle part is passed. For fixing the rear handle part, this part is disposed in a way that it can be clamped between the back end of the forward handle part and an intermediate part, for instance disk-shaped, that is disposed on the back end of the rear handle part.

To prevent the vibrations of the face from being transmitted during play to the player's hand via the handle part, it has proved advantageous for the rear handle part to be supported on the handle shaft via elastic rings disposed

toward the front and back ends in the recess of the rear handle part. This kind of vibration damping is improved still further if an elastic annular disk is disposed between the forward handle part and rear handle part.

In a second embodiment of the invention, the rear handle part is composed of a plurality of disklike portions, disposed axially one after the other, which are each likewise rotatable about the handle shaft and can be fixed once they reach their optimal position. Such a design considerably increases the capability of individually adapting the handle to the size and individual posture of the player's hand.

The disklike portions can each have a central bore, whose diameter is slightly larger than the outside diameter of the handle shaft. However, it is also possible, particularly to damp vibration of the face to the hand of each player, for the disklike portions each to be provided with a somewhat larger central recess, in which an elastic ring provided with a central bore is disposed; in that case, the central bore of the elastic ring has a diameter that is slightly larger than the outside diameter of the handle shaft.

An especially good grasp of the handle can be achieved if the disklike portions of the rear handle part are spaced apart from one another by spacing disks, which have a smaller outside diameter than the disklike portions.

The handle shaft can for instance be a metal tube or a tube made of carbon.

Further details and advantages of the invention will become apparent from the ensuing exemplary embodiments

described in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figs. 1 and 2 show longitudinal sections of two different ping-pong paddles according to the invention in a side view, in which the rear handle part in each case is embodied in one piece;

Figs. 3 and 4 show front views of ping-pong paddles, shown partly in section, in which the rear handle part is composed of a plurality of disklike portions disposed axially one after the other; and

Fig. 5 shows the front view of a further exemplary embodiment, with a rear handle part composed of disklike portions.

DETAILED DESCRIPTION OF THE INVENTION

In Fig. 1, a ping-pong paddle of the invention is designated by reference numeral 1 and essentially includes a face 2 and a handle 3. The handle 3 comprises a forward handle part 4, which is solidly joined the face 2, and a rear handle part 5, axially adjoining the forward handle part 4, which is embodied in one piece.

The first end 6 of a handle shaft 8, extending in the direction of the central longitudinal axis 7 of the handle 3 and formed by a metal tube, is secured to the forward handle part 4 and is passed through a longitudinally extending recess 9 in the rear handle part 5.

The rear handle part 5 is clamped between the back end 10 of the forward handle part 4 and an intermediate part 11

that is disposed on the back end of the rear handle part 5 and comprises a shim. The clamping action is accomplished by the screw head 12 of a screw 14 that is screwed into the second end 13 of the handle shaft 8.

If a player finds that the handle 3 is not optimally adapted to his own physical posture, all he has to do is loosen the screw 14 and, by rotating the rear handle part 5, adapt the handle 3 to whatever is for him the most pleasing positioning of his hand. The smooth surface dividing the forward handle part 4 from the rear handle part 5 allows continuously variable rotation. The player can then fix the rear handle part 5, which as a rule has been twisted (or misaligned) only slightly, again by tightening the screw 14.

Fig. 2 shows an exemplary embodiment of a ping-pong paddle 1' that is modified somewhat compared to Fig. 1. The elements that correspond essentially to those of Fig. 1 are identified by the same reference numerals.

Essentially, the exemplary embodiment shown in Fig. 2 differs from the exemplary embodiment shown in Fig. 1 in that to prevent vibration of the face 2 from being transmitted to the rear handle part 5, on the one hand, an elastic annular disk 15 is provided between the forward handle part 4 and the rear handle part 5, and on the other hand, the rear handle part 5 is braced on the front and back ends on the handle shaft 8 via elastic rings 16, 17 disposed in the recess 9.

In the exemplary embodiment described above, the clamping force for fixation of the rear handle part 5 is furthermore generated by a nut 18 that can be screwed onto the second end 13 of the handle shaft 8.

Figs. 3 and 4 show ping-pong paddles 1'' and 1''' in which the respective rear handle parts 5' and 5'' each include eight disklike portions 20, 20', disposed axially one after the other, that are slipped onto the respective handle shaft 8 and are braced via a intermediate part 11 by means of a screw 14. Adjacent disklike portions 20, 20' are spaced apart from one another by spacing disks 21, which have a smaller outside diameter than the disklike portions 20, 20'.

As can be seen from Figs. 3 and 4, the outside diameters of the disklike portions 20, 20' are selected such that they increase from the forward handle part 4 toward the intermediate part 11.

While Fig. 3 shows an exemplary embodiment of the invention in which the disklike portions 20 are each provided with a central bore 22 whose diameter is slightly larger than the outside diameter of the handle shaft 8, Fig. 4 shows an exemplary embodiment in which the disklike portions 20' are each provided with a recess 23 in which an elastic ring 25 is disposed that is provided with a central bore 24. The central bore 24 of the elastic ring 25, which ring is intended to reduce the transmission of vibration from the face 2 to the rear handle part 5'' via the handle shaft 8, has a diameter that is slightly greater than the outside diameter of the handle shaft 8.

The invention is understood not to be limited to the exemplary embodiments described above. Fig. 5, for instance, shows the exemplary embodiment of a ping-pong paddle 1^{IV}, with a rear handle part 5''' that includes a plurality of portions and in which the diameters of the disklike portions 20'' are greatest in the middle region of the rear handle part 5''' and decrease both toward the forward handle part 4

and toward the intermediate part 11.

List of Reference Numerals

1-1 ^{IV}	Ping-pong paddle, paddle
2	Face
3	Handle
4	forward handle part
5-5'''	rear handle part
6	First end
7	Longitudinal axis, axis of symmetry
8	Handle shaft
9	Recess
10	Back end
11	Intermediate part
12	Screw head
13	Second end
14	Screw, screw connection
15	Elastic annular disk
16, 17	Elastic rings
18	Nut, screw connection
20-20''	Disklike portions
21	Spacing disk
22	Bore, recess
23	Recess
24	Central bore, recess
25	Elastic ring